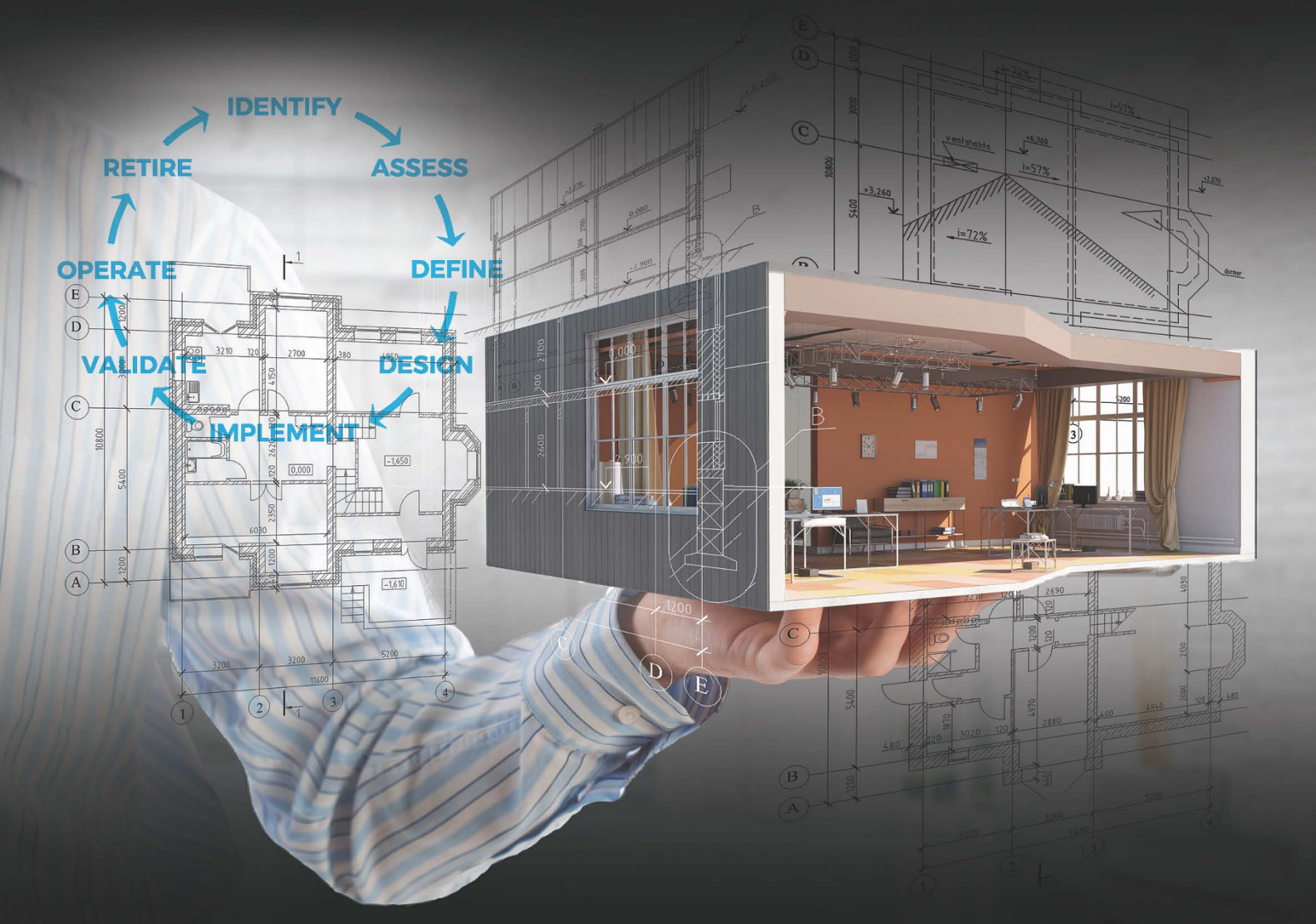
CODE OF PRACTICE FOR PROJECT MANAGEMENT FOR THE BUILT ENVIRONMENT



SIXTH EDITION

WILEY Blackwell

CIOB
THE CHARTERED INSTITUTE OF BUILDING

Code of Practice for Project Management for the Built Environment

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Sixth Edition

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Foreword

The fifth edition of the Code of Practice was published in 2014 and there have been many challenges and changes within the industry since then, which had to be reflected in the sixth edition.

When we set out on the task of developing the sixth edition, we initially thought that we could carry out an update of the fifth edition. We very soon realised that there has been so much change in the industry between 2014 and 2022 that a significant rewrite and restructure of the Code of Practice would be required. In fact, I think it's fair to say that in the last ten years we have seen change – the speed of which is unprecedented, thus the need for a restructuring and rewrite of the Code rather than an update of what we had in the fifth edition.

The overarching main theme for my Presidential year is the role of the client, and I have a firm belief that clients should be the force for positive change. For the change in the industry to be maintained in a sustainable manner, the role of the Client Project Manager must not be under-estimated.

I have the ambition for CIOB to be the professional body of choice for clients globally, and I believe that this sixth edition will be of great assistance to all Project Managers representing clients of all sizes and organisational types.

Equally the sixth edition serves as the 'go-to' Code of Practice for all Project Managers regardless of their backgrounds and non-client role within the Built Environment processes.

The importance of good project management has never been so vital. The industry has many challenges as it strives to change its image and reputation, increase productivity, improve quality and building safety in addition to a modernisation programme, which will bring more off-site manufacturing alongside the role of digitisation. Sustainability is at the heart of the CIOB's corporate plan and as such, will be producing a separate document to complement the *Code of Practice for Project Management*, sixth edition, that specialises in climate and environmental risk matters.

I pay tribute to my colleagues at CIOB and others who have offered advice and guidance as the sixth edition was developed. My special thanks and appreciation go to the working group for their huge efforts and diligence in commenting and contributing to this sixth edition. With their help, I hope that this version provides a positive contribution to all the challenges referred to above as the industry continues its journey of improvement in the complex world it operates in.

Mike Foy OBE MBA FCIOB FCMI
CIOB President 2021/2022

Acknowledgements

I'm delighted to present the latest edition of CIOB's Code of Practice for Project Management for the Built Environment.

Since the ground-breaking first edition of this Code of Practice was published in 1992, it has evolved over the years to meet the needs of built environment professionals in an ever-changing industry. This edition, the sixth, has been significantly revamped to reflect those changes and remain at the forefront of professional practice in construction project management.

This document is the result of a great deal of hard work from some talented and experienced people and I would like to thank them for their contribution. Particular acknowledgement and thanks must go to the working group, expertly chaired by Mike Foy OBE FCIOB (CIOB President 2021/2022) – I thank them for their expertise and commitment and for producing this excellent publication. My gratitude also extends to my CIOB colleagues who contributed to the creation of this edition of the Code of Practice.

Finally, I would like to thank all our members and readers who take the time to stay at the forefront of their profession and lead by example with the adoption of best practice wherever possible.

I hope you enjoy the wealth of knowledge and practical guidance contained in our updated Code of Practice for Project Management for the Built Environment.

Caroline Gumble
Chief Executive

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0 Introduction

Purpose

The purpose of this sixth edition of the *Code of Practice for Project Management for the Built Environment* is to bring together:

- best practice associated with the management of projects in the built environment, with
- the strategic imperatives of the sector to drive a 'step change' in performance in terms of health, safety, well-being, sustainability, quality, productivity and value and
- to assist users with guidance and advice related to efficient and effective project management.

The construction industry is advancing and accelerating as we incorporate improvements into our built environment focusing on the whole life cycle of an asset, including the implications of climate change. It is therefore imperative to continually monitor and validate key changes in UK Government policies and corporate strategies and that the CIOB *Code of Practice* is used to improve our construction operational capability.

The vision of the Chartered Institute of Building (CIOB) is to lead and inspire excellence in the built environment, focused on the CIOB Royal Charter. It is important to follow the national and internationally agreed standards, i.e. BREEAM, LEED, GreenStar etc. This will help reduce consumer demand for heavily polluting goods and services, the aim being to promote cleaner energy and transport systems with non-fossil fuels producing at least 60% of the required energy output by 2050 in order to achieve the required drastic reductions of carbon emissions. It could also be suggested that user/client/organisational behaviour/expectations need to change significantly to achieve this. This edition of the *Code of Practice* consolidates latest thinking on the part project management plays in achieving the vision, considering the whole life of assets. It provides a guide for practitioners at all stages of their professional development and career.

Core concepts

There are many different definitions in existence for the core concepts and ideas used throughout this *Code of Practice*, including what is meant by the

Code of Practice for Project Management for the Built Environment, Sixth Edition. Chartered Institute of Building.

'built environment', what is a 'project' and what is meant by the term 'life cycle'. A description of core concepts is provided as follows:

Built environment

The term 'built environment' relates to man-made assets and infrastructure, regardless of client type, funding, size, scale or complexity. Built assets and infrastructure exist in transportation (road, rail, airports, maritime ports), power and utilities (nuclear, oil and gas, tidal lagoons, offshore wind, solar, water, electricity, telecommunications), natural defences (flood defences, dams), as well as buildings (homes, hospitals, schools, factories, warehouses, offices, hotels) and the parks, plazas and other spaces that create the environment in which people interact. All sectors continue to advance at a pace, a full and separate awareness of progress and improvements is imperative for an efficient and effective project manager.

Project

The term 'project' describes the multiple ways over the entire life cycle of a built environment asset, in which clients organise the work to create, repurpose and eventually retire built assets in order to achieve objectives and realise the desired value for end users, clients and funding bodies. Projects are delivered by temporary organisations: teams of people, from multiple organisations, working collaboratively in a structured way:

- to achieve defined objectives and quality standards
- in a context of competing time and cost constraints
- navigating significant uncertainty and risk
- to operate in an environmentally friendly manner
- to provide feedback and learn lessons
- to evaluate the performance of the project stakeholders

Life cycle

The term 'life cycle' refers to the key stages of the whole life of a built asset and the objectives and decisions associated with each stage. The *Code of Practice* is structured around eight life cycle stages that address the work necessary to identify, assess, define, design, implement, validate, operate and retire assets. The scope of some projects will address only parts of the asset life cycle, but the client nevertheless has the responsibility to decide how to organise the work across the whole life cycle, including the governance required to decide to move from one life cycle stage to the next. The life cycle is best considered as a closed loop as shown in Figure 0.1 with a final decision-point culminating at the end of life of an asset whether to (1) extend life by continuing to use and maintain to the original design or to (2) retire the original design and repurpose all or parts of the asset. The latter scenario would trigger a new project. It is important to map out what stages of the life cycle apply to your projects in the identification phase of your scheme. If relevant actions and project data are applied to each stage and continually monitored via updated programmes and plans, it will be possible to manage each element of the life cycle before moving onto the next stage. It is recommended that a validated and logic linked plan with a critical path is developed as early as possible in the project life cycle.

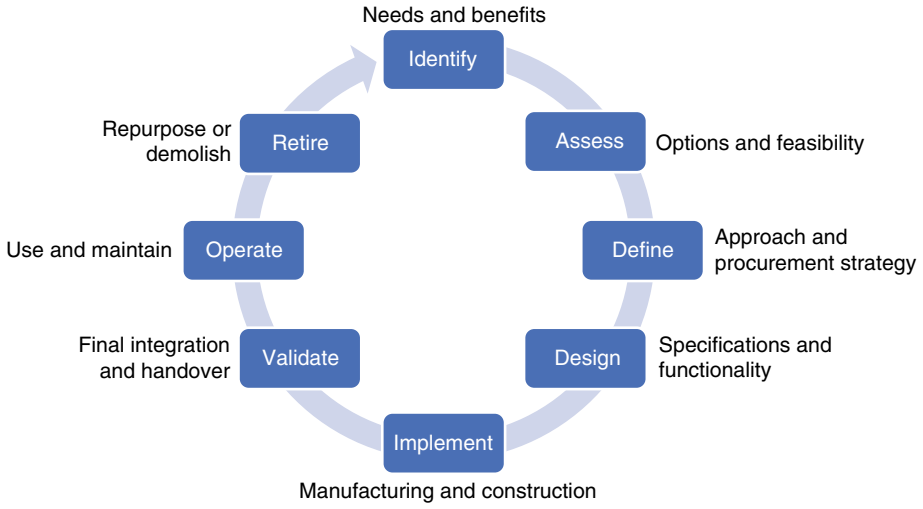

Figure 0.1 Project life cycle.

Different parts of the sector use different terminology for the life cycle stages as shown in Table 0.1. Some focus on the whole life of the asset, others on a more limited set of stages reflecting a particular technical discipline or specialist viewpoint. The rationale for the life cycle stages chosen is to reflect the broadest application of project management in the built environment and to focus the stage titles on the work undertaken in each stage.

It is important in the current climate to include an awareness of the sustainability life cycle. The below Table 0.2 highlights the stages and activities that should be considered in addition to the project life cycle stages described in the table above.

Sustainability overview Sustainability and sustainable development have advanced greatly since the fifth edition of the *Code of Practice*. Climate science has improved the understanding of how the planet has reacted negatively to industrial practices and unsustainable consumerism.

Sustainability encompasses the three core elements, namely economic, social and environmental. It is relevant that a project manager in the built environment appreciates these issues, familiarises themselves with innovative and more environmentally friendly ways of working and, where relevant, recommends or appoints the necessary expertise to ensure that the correct sustainability criteria and governance is embedded in projects and programmes of work.

The CIOB will be producing a separate document to complement the sixth edition of the *Code of Practice for Project Management* that specialises in climate and environmental risk matters.

As a minimum, the sustainability expert should be able to inform and advise from a sustainability perspective on the following criteria:

- Understanding the project's core and supporting processes (and sub-processes)
- Understanding and communicating the benefits of a sustainable supply chain
- Identifying the primary and secondary supply chain stakeholders

Table 0.1 Comparison of project life cycle stages

Sixth Edition of CIOB *Code of Practice for Project Management for the Built Environment*	**Royal Institute of British Architects (RIBA) Plan of Work 2020**	**ISO 55000:2014 Asset management – Overview, principles and terminology**	**BS 6079:2019 Project management. Principles and guidance for the management of projects**	**Fifth Edition of CIOB *Code of Practice for Project Management for the Built Environment* (reference only)**
1. **Identify**: needs and benefits. What are the needs and benefits for your specific project?	0. Strategic definition 1. Preparation and brief	Business Case	Investigation	Inception
2. **Assess**: options and feasibility (for the project(s))	2. Concept design			Feasibility
3. **Define:** approach and procurement strategy, logic linked to a defined programme	(programming and planning)		Development	Strategy
4. **Design**: specifications and functionality ensuring a coordinated design	3. Spatial coordination 4. Technical design	Create or acquire		Pre-construction
5. **Implement**: manufacture and construction applying robust quality assurance and quality control procedures	5. Manufacture and construction			Construction
6. **Validate**: integrate and handover with full administration procedures	6. Handover			Testing and commissioning
7. **Operate**: use and maintain to meet the clients' expectations	7. Use	Operate and maintain	Operation	Completion, handover and operation Post-completion review and in use
8. **Retire:** repurpose or demolish for a new function		Dispose or replace	Upgrade, or disposal/ retirement/withdrawal	

Table 0.2 Stages in the sustainability life cycle

Sixth Edition of the CIOB *Code of Practice for Project Management*	SOCIAL Sustainability activities	ECONOMIC Sustainability activities	ENVIRONMENTAL Sustainability activities
1. **Identify**: needs and benefits	Establish sustainability goals from international, national and local government strategies, from the client and end-user perspective or (via your own) business requirements	Establish sustainability goals from international, national and local government strategies, from the client and end-user perspective or (via your own) business requirements	Establish sustainability goals and establish your environmental mandate from international, national and local government strategies, from the client and end-user perspective or (via your own) business requirements
	Identify project impact on social needs from local investigations. This should include an analysis of your Corporate Social Responsibility (CSR) strategy	Identify project impact on the economy from local investigations	Identify project impact on the environment from local investigations
			Review (your) existing organisational (environmental) policy
2. **Assess**: options and feasibility	Carry out impact assessments Review legal requirements Establish best practice including consideration for stakeholders Consider type of users/stakeholders Consider financial incentives/funding options with stakeholder involvement		
3. **Develop**: approach and procurement strategy	Produce a sustainability plan to include sustainability in procurement criteria		
4. **Design**: specifications and functionality	Co-ordinate, review and update sustainability requirements		
5. **Implement**: manufacture and construct	Quality criteria, monitoring and benchmarking incorporated into a quality assurance and quality control process		
6. **Validate**: integrate and handover	Information and education including continual information and education flow		
7. **Operate**: use and maintain	Monitor all data management and review results for incorporation into operational and maintenance documentation		
8. **Retire**: repurpose or demolish	Review and implement findings as necessary		

- Undertaking a stakeholder analysis and establishing who has the greatest impact on the sustainable supply chain (using techniques such as Pareto analysis)
- Knowing where products are coming from and controlling product/component variety
- Benchmarking performance using science-based targets

- Treating a sustainable supply chain as a systemic risk to the project
- Creating a communication system to capture lessons learned and to facilitate the exchange of best practice
- Recommend and advise in the use of clean technology energy in the construction life cycle

Environmental mandates (including social value and carbon net zero aspirations)

Economic, social and environmental performance and impact is a critical client consideration. These elements of sustainability and sustainable development include sustainable financing, which takes into account the environmental and social performance of the asset. They may also include requirements for embodied and operational carbon emissions and energy consumption, as well as prescribing requirements for environmental impact on the local topography or adjacent area. Lastly, outcomes in terms of the local community, such as providing employment and training opportunities or the use of local supply chain, may be determined.

A sustainability mandate for the project will support the management framework for the planning and implementation of construction activities in accordance with the sustainability commitments of the organisation, the project context, funders, project end users or any other stakeholders.

The sustainability mandate will influence key design parameters relating to sustainability, performance and operational technologies. It should also outline the overall environmental management criteria including what are the key success factors (for the project(s)) in terms of sustainability management. It is the role of the project manager to debate, evolve, prepare and manage all required sustainability mandates, noting that the environment is only one element of sustainability. This will require project managers to understand and have knowledge of environmental science/energy management of built assets, climate change science or biodiversity sufficiently enough to have meaningful discussions with the project stakeholders at all life cycle stages.

Strategic drivers

Since publication of the fifth edition, strategic drivers and priorities have been influenced by a number of occurrences and reports across the world. In 2013, the UK Government issued the 2025 vision and strategy for construction.[1] The vision was to adopt 'smart construction', which is low carbon and sustainable, supported by digital design to improve performance.

Management of the impact of organisational activities on the natural environment in all sectors was addressed by publication of the standard for environmental management systems, ISO 14001:2015.[2] Also, in 2015, the United Nations published their 17 Sustainable Development Goals and a *call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet*.[3] In 2016, the Building Research Establishment (BRE) published

[1] HM Government (2013) "Construction 2025". Crown Copyright.

[2] International Standards Organisation (2015) "ISO 14001:2015 Environmental management systems – Requirements with guidance for use".

[3] United Nations (2015) "Transforming our World: the 2030 Agenda for Sustainable Development". A/RES/70/1.